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ORIGINAL ARTICLE | DRUG ABUSE

Prevalence and Determinants of Substance Abuse Among Slum Dwellers in Islamabad- Pakistan

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ABSTRACT

Background: In Pakistan, slums are illegal settlements that are always left out in health surveys. However, studies around the world show that substance or drug abuse is higher among slum dwellers and may have different patterns and determinants which need to be studied in order to frame targeted programs and policies. The present study was aimed at estimating the magnitude, as well as determinants of substance/drug abuse among slum dwellers in Islamabad, the capital city of Pakistan.

Methods: A community-based cross-sectional study was conducted among the residents of slums/nomadic settlements of Islamabad. A population of 207 individuals was calculated as the appropriate sample size. Both female and male participants aged 15 years and above, from 9 randomly selected slum clusters in Islamabad provided their consent to participate in the study. From each cluster, 23 households were selected, and from each household one individual was randomly selected for estimating the prevalence of substance abuse. All those who were abusing substances were counted as cases and others as controls for case-control analysis. A structured questionnaire was used to gather information on demographics, trends, types of substances abused, risk factors for getting engaged in substance abuse, whether they had tried to quit at any stage, and what difficulties they faced when trying to quit. Results were entered and analyzed using Epi-info version 7.2.

Results: A total of 204 participants were enrolled in this study. Among these, 68 (33.3%) were substance or drug abusers. Bivariate analysis of the risk factors indicated that easy access to drugs in slum areas (OR: 20.3, $p=0.000$), exposure to tobacco smoking (OR: 8.8, $p=0.000$), and being a working child (OR: 6.0, $p=0.000$), were strong predictors of substance abuse. Education (OR: 0.2, $p=0.000$), and living with own parents during childhood (OR: 0.7 $p=0.2$) had protective effects against substance abuse.

Conclusion and Implications for Translation: The study concluded that the following were the determinants of substance/drug abuse among the slum dwellers in the study: easy access to drugs, high rate of tobacco consumption, poverty, illiteracy, and being a working-child. Specific policies and plans focusing on law enforcement for curbing the illegal drug sales and reduction of child labor, along with the provision of education, should be devised and implemented to help these neglected communities and modify the identified determinants.

Keywords: • Substance Abuse • Drug Abuse • Slum Dwellers • Case-control • Islamabad • Pakistan

I. Introduction

Substance abuse in Pakistan is one of the major causes of concern that affects almost all segments of society. In 2013, an estimated 6% (6.7 million adults) of the population in Pakistan were abusing drugs or substances.¹

Substance abuse not only has devastating effects on the physical and psychological wellbeing of people, but also has adverse effects on the economic growth of the country. Particularly, heroin abuse is spreading at a high rate, especially among those between the ages of 15 and 39 years.¹ Pakistan has extensively been exposed to illegal opium trafficking and abuse, with an emergence of methamphetamine use as of late. Cannabis usage appears to be most prevalent in people aged 30 to 34, whereas heroin use appears to be most prevalent in people aged 35 to 39.¹

According to a study by Khalily² on developing a coordinated response to drug abuse in Pakistan, the average age of initiation of drug use is 18 years and drugs are more prevalent among the lower and lower-middle classes of society in some areas of the country.² Cannabis was found to be the most commonly used drug in Pakistan affecting 3.6% of the adult population. Opiates are used by almost 1% of overall drug users.³

The increasing point of concern is the high prevalence of non-medical use of prescription drugs nationwide, particularly among women. Among addicts, women have a higher prevalence of drug use when compared to men in Pakistan. A high proportion of women that have confirmed their drug use, revealed that they have resorted to misusing opioid-based painkillers, and to a lesser extent tranquilizers and sedatives, which are readily available in pharmacies.² Alcohol, cocaine, hallucinogens, heroin, inhalants, ketamine, marijuana (cannabis/bang), methamphetamine (white crystalline powder), prescription opioids, prescription sedatives (tranquilizers, depressants) steroids (anabolic), tobacco, nicotine, niswar are reported substances that are abused.

The situation is of concern due to the high prevalence of Hepatitis B and C, which is associated to injection drug use. The number of people injecting drugs is estimated to be 4.3 million (0.4%) across

the country.¹ Factors responsible for the expanding drug use in Pakistan include the easy access to drugs at very low prices, unemployment, individual's dissatisfaction with their economic situation, low level of education, lack of education about drugs within the family and educational institutions, peer pressure, and negligence of parents.^{4,5}

Pakistan is situated in the northwestern part of the south Asian subcontinent, comprising a total land area of 796,096 square kilometers. Administratively, Pakistan has four provinces named Punjab, Sindh, Khyber Pakhtunkhwa, and Baluchistan along with the Federally Administrative Tribal Areas (FATA), and the Gilgit Baltistan region.⁶ According to the 2017 census report, Pakistan has a total population of almost 207 million people.⁷ Pakistan is an agricultural country, that used to have more than 70% of the population living in rural areas, but during the last few decades, the country has faced rapid urbanization. The share of Pakistan's urban population was 28.3% in 1981, rising to 32.5% during 1998, and reaching to 37.9% during 2017.⁸ High urbanization trends arise mainly due to poor agricultural policies by the government, inadequate employment avenues, and low quality of life in rural areas.⁹

Rapid urbanization has generated some public health issues due to limited urban infrastructure and housing facilities in the country. People from lower socioeconomic classes are unable to build appropriate shelters in large cities, leading to the building of squatter housing settlements known as slums. According to Encyclopedia Britannica, a slum is defined as "a residential area that is physically and socially deteriorated and where satisfactory family life is impossible."¹⁰ Poor housing is the main index of slum populations which includes poor dwellings, inadequate infrastructure, absence of family privacy, and no space for recreational facilities.¹¹ In addition to these, illiteracy, unemployment, poverty, poor health, and deficient sanitation are the common features of the people living in these slums.¹¹ In most cases, the government or any other health authorities do not usually account for the basic living requirements of slum dwellers.¹²

Though the living conditions, health facilities, and health services are not optimal for even the general

population, they are far superior compared to those in the slums, due to access to better housing, employment opportunities, and health services. As the settlements are illegal and temporary, they are unable to become a focus for the facilitation of infrastructure, health and education facilities, and law regulation and enforcement. All these factors make the slum dwellers “underserved population” and thus vulnerable. The growing number of slum areas in Pakistan is a major issue exacerbated by the occurrence of floods, growing urbanization, the unplanned growth of cities, and the concentration of employment opportunities within urban settlements. Pakistan’s slums have many similarities compared to other low- and middle-income countries (LMICs), such as overcrowding, lack of housing, inadequate hygiene, extremely poor sanitation, precarious economic situation, low education levels and limited to no access to healthcare. Also, there is no healthcare delivery system focused on these underserved populations. Literature shows that the slums are at the worst of conditions, especially concerning their healthcare. Slums are missed in health and other global surveys of Pakistan. However, studies around the world show that substance abuse is relatively high among slum dwellers, which may have different patterns that need to be studied so that information can be used to target programs and policies.¹³⁻¹⁵

Therefore, the purpose of this study was to provide an insight into the gravity of substance/drug abuse and identify its determinants among such vulnerable populations.

2. Methods

A community-based, cross-sectional study was performed, involving the populations living in slums/nomadic settlements of Islamabad. Adults from both sexes and aged 15 years old and above, were enrolled from selected clusters, and consented to participate in the study. Mentally unstable individuals, and those that could not comprehend the questions asked, were excluded from the study.

The survey was planned in a two-staged cluster sampling manner, to ensure adequate coverage. According to the latest list from Islamabad’s (Federal

Capital of Pakistan) Capital Development Authority (CDA), almost 18 settlements were present, with an estimated population of 80,000 people. A total of 9 out of the 18 settlements were randomly selected to cover approximately 50% of the area. Epi Info software¹⁶ (CDC Epi Info 2010) was used to calculate the sample size for the population-based survey, with a 95% confidence limit, a 5% margin of error, and a 5% substance abuse prevalence. Assuming a design effect of 2.00, the minimum sample size was 154 people; then, by adding a difference of 20% to account for the possible non-response rate, the sample size became 207 people. From each cluster, and in a randomized manner, a total of 23 households were selected. Subsequently, one individual from each household was randomly selected for estimating the prevalence of substance abuse. Substance abusers were considered case subjects, while non-substance abusers were deemed as control subjects.

The questionnaire contained both close-ended and open-ended questions on demographic characteristics, type and pattern of use of illicit drugs (alcohol, cocaine, hallucinogens, heroin, inhalants, ketamine, marijuana (cannabis/bang), methamphetamine (white crystalline powder), prescription opioids, prescription sedatives (tranquilizers, depressants) steroids (anabolic), tobacco use, nicotine, naswar, time of initiation, reason for continuing with this abuse, and efforts of quitting, if attempted at any time. The questionnaire was administered by a team of trained data collectors who use to have a prior meeting with the community head for permission to carry out the survey.

2.1. Ethical considerations

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Pakistan Health Research Council (PHRC), which is the agency with the mandate to issue ethical clearances to in-country research studies. Informed written consent was obtained in Urdu (national language) from the respondents. There were a majority of uneducated members in the population, thus a community member accompanied the researchers while taking consent, who would explain the research study

objectives and requirements to the respondents. Participants were assured of the confidentiality of the information by not using personal identifiers. They were also given the choice to leave the study at any point if they wanted to.

3. Results

3.1. Sociodemographic characteristics

A total of 204 participants were enrolled in the study. Among these, 68 (33.3%) were found to be drug users, and as such, were considered the case subjects; this would leave a total of 136 (66.7%) participants to be deemed as the control subjects. The majority of participants were male, constituting a total of 187 participants (91.7%), while only 36 participants (8.3%) were female. The mean age of the respondents was 39.5±14 years (range 16-85 years), and the mean age of drug users was 35.3 ± 13.7 (range 17-41.5 years) (Table 1). The age wise distribution showed the highest prevalence of substance abuse in ages 30-44 years followed by ages 15-29 years. Drug use is less prevalent in older age groups. (Figure 1).

3.2. Risk factors for substance/drug abuse

Drug abuse was reported by 33.3% (n= 68) of the respondents; 38% of these abusers were addicted to two or more types of drugs. A total of 84% of the drug users were working since their childhood, while 67% were trying to earn money to support their drug addiction. The majority (66%) of the substance abusers were also tobacco smokers. Easy access to illegal drugs was reported by 61%

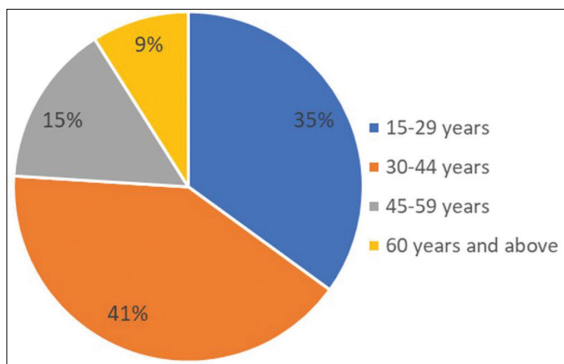


Figure 1: Prevalence of drug abuse among different age groups in slum dwellers of Islamabad

of the cases. Furthermore, of the case subjects, 48% were living with parents during their childhood, 32% never went to school, and 45% were exposed to substance abuse because their family member use drugs (Table 2).

Bivariate analysis of the risk factors indicated that easy availability of drugs in slum areas (OR: 20.3; p= 0.000), exposure to tobacco smoking (OR: 8.8; p= 0.000), being a working child (OR: 6.0; p= 0.000) and use of drugs by a family member (OR: 2.2; p= 0.005) were the strong predictors of high substance abuse among slum area residents. It was further determined that education (OR:0.2;p= 0.000) and living with parents during childhood (OR: 0.7; p= 0.2) had a protective effect against substance abuse (Table 3).

4. Discussion

The study found a high prevalence of substance abuse (33.3%) among dwellers in slum settlements in Islamabad. This is much higher when compared to

Table 1: Demographic information of the study participants

Demographic information	Frequency among cases (%)	Frequency among controls (%)
Age (years)		
Mean age±standard deviation	35.314 years (17-41.55 years)	40±13 (16-85 years)
15-29 years	24 (35.29)	24 (17.65)
30-44 years	28 (41.18)	60 (44.12)
45-59 years	10 (14.71)	36 (26.47)
60 years and above	6 (8.82)	16 (11.76)
Educational level		
Uneducated	42 (62.00)	72 (52.00)
Up to primary	20 (29.00)	48 (35.00)
Up to high school	6 (9.00)	12 (9.00)
College and above	0 (0.00)	2 (1.40)
Monthly income		
≤10,000 PKR*	30 (44.00)	38(28.00)
10-20,000 PKR	4 (4.80)	80 (59.00)
20-40,000 PKR	34 (50.0)	17 (12.00)
40,000 and above	0 (0.00)	1 (0.70)

*154.34 PKR (Pakistan Rupees)=1.00 (U.S. Dollar)

the estimated country report in 2013.³ A higher than expected prevalence of substance abuse in special communities like slums are also reported in other studies across the globe; in India, for example, it is reported to be 43%.¹⁷⁻¹⁹ The present study observed that earlier exposure to tobacco smoking made a person more prone to indulge in illicit drug abuse which is strongly supported by the study by Ghulam et al.²⁰

There are numerous factors influencing the engagement in substance abuse such as the influence of friends or peer pressure, social and family stresses, or someone else in the family using drugs.^{6,21} In addition, the study indicated that living with parents as a child had a protective effect against substance abuse. However, belonging to a broken family, living on your own, or living as a working child, were suggestive of being strong predictors of substance abuse. This was supported by a prior study, which described factors such as problems with parental or marital relations, a relationship breakup, the desire to escape stressful life events, or feelings of failure, as being contributors to substance abuse.²²

Table 2: Distribution of risk factors among cases and controls

Risk factors	Percentage among cases (%)	Percentage among controls (%)
Never attended the school	32.0	67.0
Lived with parents during childhood	48.0	57.0
Use of drugs by family member	45.0	27.2
Easy access to drugs	61.0	7.3
Worked as a child	84.0	46.3
Smokers status	66.0	18.0

Another important finding of the present study was that easy access to drugs was one of the strongest predictors of substance abuse within slums. Illegal and unregulated communities seem to be the hub of illicit activities and drugs, and where these are easily accessible, thus increasing the exposure to the population.²² Findings also showed the protective effect of education, which is largely supported by other studies, thereby further strengthening the argument that education has a special place while addressing such issues.¹⁷⁻²²

4.1. Limitations

The study was a non-funded activity, therefore the lack of resources was a major limitation to going beyond a specified geographical location, namely Islamabad. Although the key characteristics of the slum areas remain the same, a study with limited geographical representation is a limitation and our results lack the element of generalizability for the slum areas of the entire Pakistan. However, this pilot study provided some insight to the gravity of the situation and warrants further large-scale interventional studies to address the modifiable determinants of substance abuse.

5. Conclusions and Implications for Translation

The prevalence of substance abuse among Islamabad residents was alarming. The determinants of substance abuse included unregulated and illegal drug sales, high rate of tobacco consumption, poverty, illiteracy, social and family issues, and being a working child. Though these determinants are inherent to slum settlements, they are largely modifiable. It is recommended that the menace of substance abuse

Table 3: Risk factors analysis of substance abuse among slums in Islamabad 2016

Risk factors	Odds Ratios (OR)	95% Confidence Interval	P- value
Easy access to drugs	20.3	9.0-45.6	0.000
Smokers status	8.8	4.5-17.3	0.000
Worked as a child	6.0	2.8-12.4	0.000
Use of drugs by family member	2.2	1.2-4.1	0.005
Never attended school	0.2	0.1-0.4	0.000
Lived with parents during childhood	0.7	0.3-1.2	0.2

among such vulnerable populations require strategic interventions such as enacting laws for curbing the illegal drug and tobacco sales and their accessibility, regulating child labor practices, and the provision of health and behavior change education.

Compliance with Ethical Standards

Conflicts of Interest: All authors hereby declare that they have no conflict of interest that may have affected the results obtained in the study.

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Ethics Approval: Ethical clearance was obtained from the Institutional Review Board (IRB) of Pakistan Health Research Council (PHRC). Informed written consent was obtained from respondents in Urdu (national language). Participants were assured of the confidentiality of the information by not using personal identifiers. They were also given a choice to leave the study at any point if they wanted to. **Acknowledgments:** As this was a non-funded activity supported by Pakistan Health Research Council; the logistics and human resource was graciously provided for this research study and we extend our gratitude for this support to PHRC and its personnel.

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Key Messages

- ▶ The prevalence of substance abuse and early age of initiation of abuse among slum residents in Islamabad is alarming.
- ▶ Unregulated and illegal sales, high rate of tobacco consumption, poverty, low level of literacy, social and family issues especially those involve working children need special consideration and an urgent attention.
- ▶ Such vulnerable populations need strategic interventions such as devising laws for curbing the illegal drug and tobacco sales and easy availability, regulating child labor practices, and the provision of health and behavior change education.

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